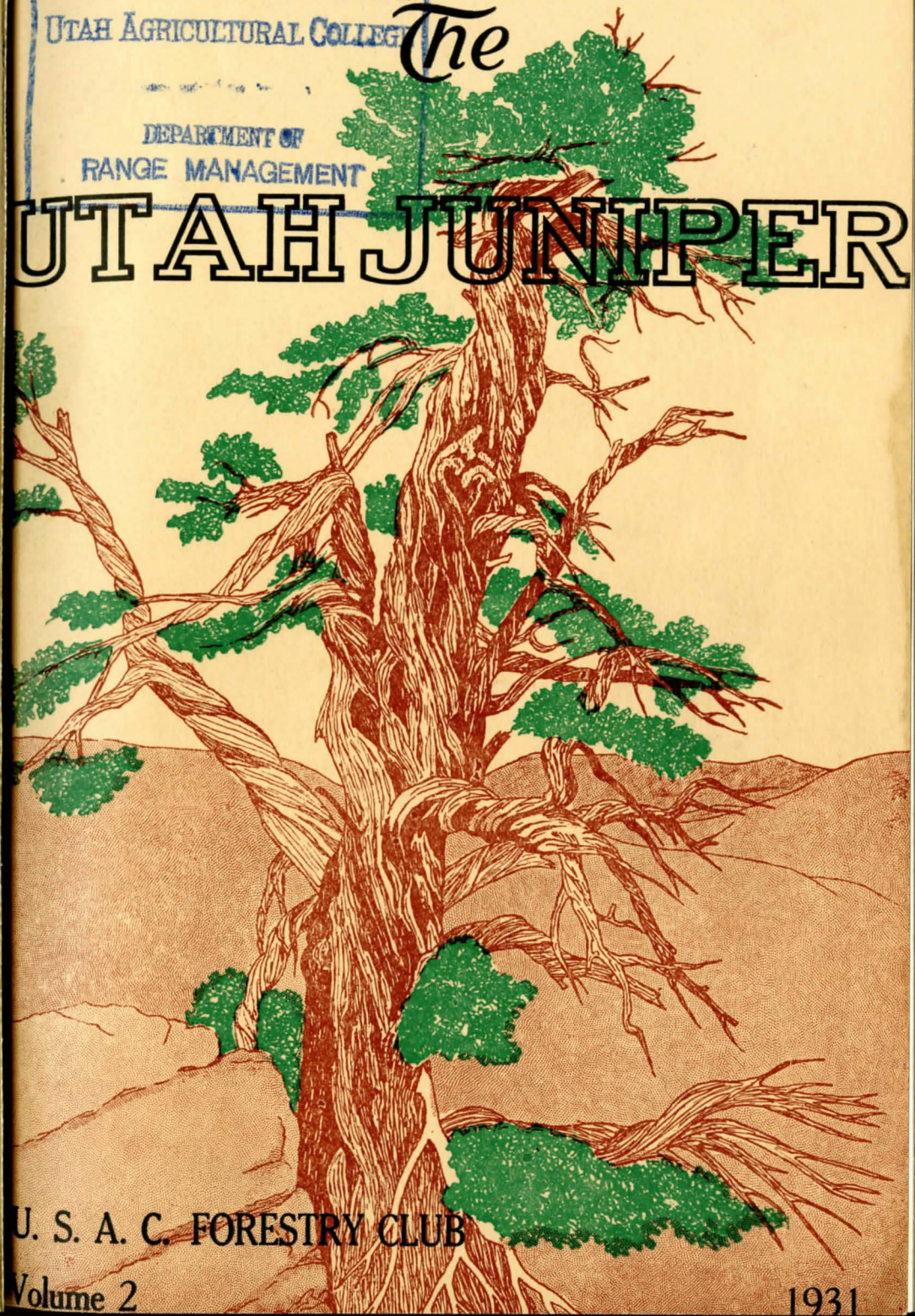
1931

# The Utah Juniper, Volume 2

Utah State University

# The UTAH JUNIPER



U. S. A. C. FORESTRY CLUB

Volume 2 1931

# THE
# UTAH JUNIPER

Published by
The Utah Foresters
Utah State Agricultural College
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1931.

## *The Cover*

*The cover design is a likeness of the old tree in Logan Canyon, for which the Utah Juniper is named. It was drawn by V. I. Bentley '31, and the Utah Foresters wish to acknowledge their gratitude to "Val" for his generous contribution.*

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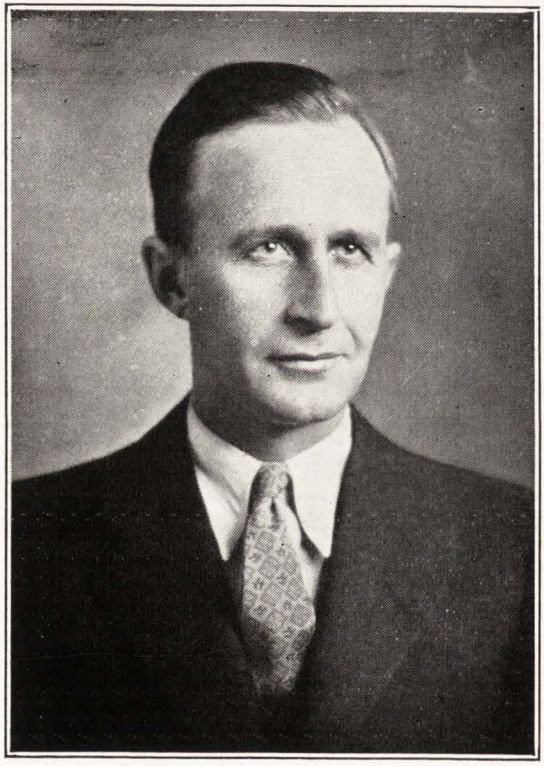

*To Lyle F. Watts, our loyal friend and the first head of the forestry department of the Utah State Agricultural College, we, the Utah Foresters, sincerely dedicate this, the second volume of the Utah Juniper.*

# Research By The Forest Ranger

By L. F. WATTS
Senior Silviculturist and Assistant Director, Intermountain Forest and Range Experiment Station.

In the United States during the past twenty-five years wild land management has passed through a phenomenal development. Prior to 1905 wild land was managed, very largely, with a view to the ultimate transformation of the land to agricultural use. It is now known that to a considerable degree this was a mistaken policy and that the wild lands now remaining, must be managed and developed on a permanent basis. Obviously, an art so diverse as this one will require a long time to perfect and many of the practices now accepted as satisfactory are doomed to be discarded as new facts and new aspects of the problem are uncovered.

In the beginning our National Forests were set aside simply as "Forest Reserves." The resources were thereby bottled up for some future time when they would be needed more urgently. Shortly, however, it became apparent this was not a true solution as the mere reservation of the resources constituted one means of strangling the development of a locality. Next came regulation by restriction and the exercise of police powers, and finally by administration through helpful direction in the use of the resources.

The forest ranger-policeman of 1905 has become the land-use-manager of today. He must be a versatile individual to meet the responsibilities of his position. He must know something of range livestock and how plants grow in order to secure the best from his forage crop. He must have a real knowledge of reproduction and growth of forests properly to protect, to tend, and to harvest his timber. He should understand recreational needs that he might be able to plan and develop the best use of this growing resource. He must have a grasp of construction methods in order to get full value out of funds spent for roads, trails, telephone lines, buildings, etc. He ought, also to have many other qualities usually possessed by different individuals to enable him to provide for the proper protection and management of the diversity of resources over which he acts as trustee. Thus the ranger of today is a busy executive who budgets his time and energy that each activity may get its full share of attention.

Why should this busy individual be expected to assist in the field of research? The question is all the more pertinent in that the

Forest Service maintains the Branch of Research with eleven Regional Experiment Stations whose sole function is to conduct needed research in the different phases of the problem.

There are several reasons why the forest ranger ought to assist in this work. First, as a means of hastening a solution of the problems with which he himself is struggling. Second, as a means of training and education in his own field and, third, as a means of enlightening the public on the question of wild land management.

The problems in wild land management are many and varied. They will not be solved by any method except by that of painstaking and continued study. The Branch of Research, at this stage of the game, must limit its activities to fit the time and finances available. This means that only such projects as are of a fundamental nature or have a broad regional significance can be attempted by it. Even though it were desirable that localized problems be attacked, the limitation in available resources would prevent this. Thus local problems as well as the adaptation of regional findings to fit local situations must be worked out by the forest ranger with such assistance and direction as may be necessary for his individual case.

The lodgepole thinning situation in the Intermountain region illustrates the need for research by the ranger. There is little likelihood that the Regional Experiment Station will be able to reach this problem for several years. The situation is critical in only a few localities such as on the area tributary to the Twin Falls Reclamation Tract. Obviously those rangers on whose districts the demand for small lodgepole pine is heavy should exert every effort to determine proper practice. What degree of thinning will encourage reproduction and growth of a new stand? How severely can the stand be thinned without heavy windfalls and snow-break in the reserved stand? What brush disposal practices are necessary in order to afford needed fire protection and assure the best reproduction? These studies are suited to the time available for ranger study and the time of answer to the problem will be materially advanced by such effort. Each ranger district has problems calling for immediate solution. Participation in the research program by the forest ranger is necessary if all of the facts are to be secured with reasonable facility.

The question of self-training is of particular interest to the forest ranger. The greater part of the men are not technically trained foresters and those who are have only a good foundation on which to build. Continued study is essential to individual progress. It has

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# The Land Economic Surveys in the Lake States.

By R. N. CUNNINGHAM, in Charge, Forest Survey
Lake States Forest Experiment Station

To appreciate the need and possible uses of a "land economic survey" in the Northern Lake States, it is necessary to call to mind certain historical and geographical facts concerning this region.

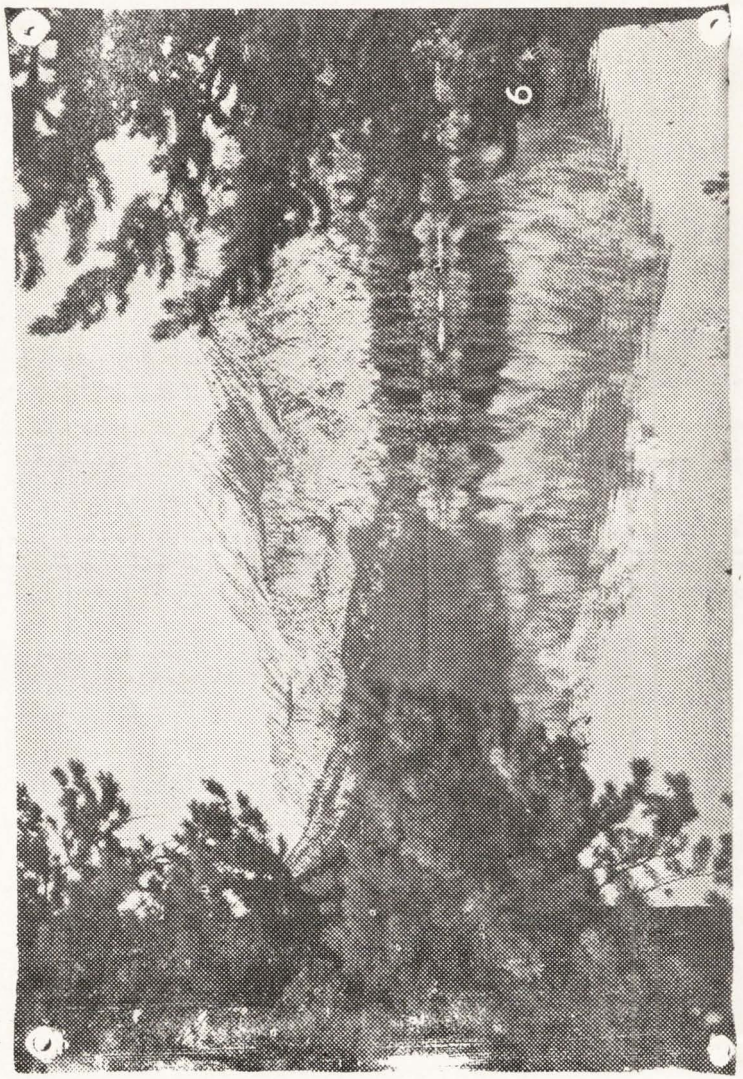
The story of lumbering in the Lake States is inspiring in its incidents of pioneer courage and in its relation to the rapid upbuilding of the middle west. It is more disheartening in its cycle of over-exploitation, decline, and in the possibility of its complete disappearance within a relatively short time if new forests are not grown. The old time lumberjack has gone now and most of the virgin timber has disappeared. The Lake States are a cut-over region.

Following the peak of lumbering, there came an agricultural boom. "A farm for every forty" was the slogan and settlers were placed on cut-over lands indiscriminately through the north country. Unscrupulous real estate and colonization companies acquired large tracts of land from lumber companies and disposed of them to settlers making the most extravagant claims for their value for farming purposes.

Much land was settled and the forest growth which had escaped the axe of the lumberman and the ravages of forest fire now was cleared by the farmer or was destroyed by fire emanating from his clearing operations. As circumstances soon proved, a great deal of this land was unsuited to agriculture or at least could not be made to pay under present conditions of market and transportation.

Then began a period of land abandonment. Not only starved-out farmers but discredited land companies and old lumber companies who saw no future possibilities in their cut-over land started to let the lands go back to states or counties for taxes. Hundreds of thousands of acres of wild land have passed into public ownership in the past 15 years and the degree of tax delinquency today is startling. Towns, counties and the states themselves are severely affected.

Devastated land in the Lake States is not essentially different from devastated land in the south, the west, or anywhere else. It has been more in the public eye, however, as has the Chicago crime situation, because the local people are willing to call a spade a spade and are anxious to face the facts squarely preparatory to doing some-



"People want a place where they can retire a few weeks in summer, canoe, fish, hunt, and forget for a time the arduous duties of their occupations."

thing about them. The story of millions of acres of idle land in Michigan, Wisconsin and Minnesota has been told without any attempt to gloss over the facts.

The situation of the cut-over lands in the Lake States, however, is not hopeless and here is where geography is a factor. The northern Lake States are immediately tributary to great industrial centers and to the great corn belt of Indiana, Illinois, Iowa Nebraska and Kansas, which must look to it not only for lumber and paper but also for summer outings. The northern Lake States are the natural playground for the middle west.

The shores of Lake Michigan from Milwaukee to Gary, Indiana, contain upwards of four million people. With steady growth stimulated by the coming Great Lakes—St. Lawrence Waterway, many expect this district to become the greatest concentration of humanity on the American continent. Detroit, Michigan and Toledo, Ohio are also large and growing centers. These people and the industries they support need limitless quantities of lumber, paper, water power, metals and minerals and other products potentially available in the north country. But even above this, they want an outdoor playground, a place where they can retire a few weeks in summer canoe, fish, hunt and forget for a time the arduous duties of their occupations. And for this they are willing to pay. True, lumber can be imported from Oregon, woodpulp from Canada, Sweden or Louisiana. Summer vacations can be taken in Maine, the Rocky Mountains or Alaska. But how much more valuable are these products, how much more available the vacations if they are nearer home. Water transportation and a fine highway system can bring these resources to the very door of these people.

There are millions of acres of forest land in the Lake States which are restocking naturally and which with reasonable protection will produce pulp wood and even saw timber within reasonably short periods. Many other areas may be planted at a very reasonable cost. There are literally thousands of lakes which offer opportunities for recreation. There are water power possibilities, mineral deposits and oil shales which may shortly be developed. There are opportunities for dairy farming and other types of agriculture.

These possibilities have been mentioned in very general terms because the exact extent and location are not thoroughly known. It was to discover these possibilities and to steer the lands into their most productive use that the Land Economic Surveys were started.

A bill creating the Soil and Economic Survey in Michigan was

passed in 1917 but on account of the war the survey was not actually commenced until 1921. Several departments cooperated in laying the plans and initiating the project. The survey progressed slowly at first and for a time it appeared that it might be discontinued altogether. The hearings held by the Senate Select Committee on Reforestation in 1923 at Bay City and Grand Rapids served to emphasize the lack of authentic information concerning the condition of the forest lands and other potential resources of the State. Many questions were asked concerning the condition of the cut-over lands, the possibilities of agricultural development, the degree of natural reforestation and the acreage in need of planting. The need of a thorough inventory became even more apparent and the survey gained new impetus. Since 1923 the work has gone steadily forward and an average of two counties has been completed each year.

Dr. Ely, the great land economist at the University of Wisconsin, early saw the need of a natural resource inventory in his State and repeatedly urged its adoption. Some experimental work was done in 1926 and 1927 and the following year a complete land and water inventory similar to the Michigan survey was completed for Bayfield County in the extreme northern part of Wisconsin. In 1929 and 1930 one other county and parts of a third and fourth were completed. Coincident with its resource inventory, Wisconsin has been making an "emergency" survey of 6 other counties. "Making the Most of Marinette County" was the title of the first report and in it the various resources of the county were described, the tax situation was analyzed and a number of concrete suggestions were made for bettering the local situation.

Minnesota made a timber survey of its State forests in 1927-28 and in 1929 started a general economic survey similar to the Michigan and Wisconsin work. This project in Hubbard County was completed in 1930.

Of what do these land economic surveys consist and what are their uses? The greater part of the survey findings are portrayed on colored maps of a scale of one inch to the mile. Each report covers one county. In Michigan a complete report consists of two colored maps, one showing the character of the soils, the other the extent of farms and various types of forest land. Descriptive and explanatory material is printed on the back of each map. By comparison of the maps and tables, the following relationships are brought out:

*Soil and Agriculture.* The soil survey which conforms to the

(Continued on Page 37 )

# Elk Propagation and Management in Utah

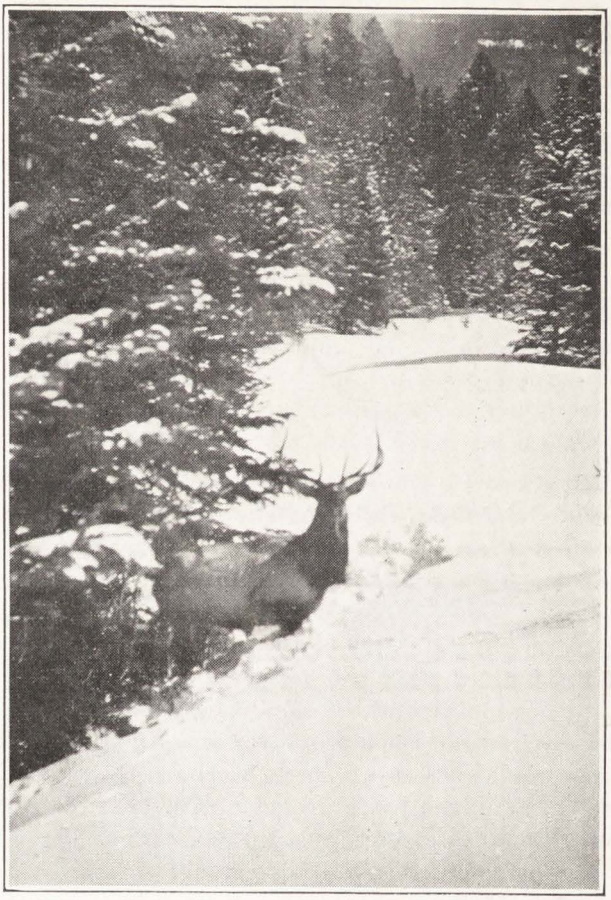
By ARNOLD STANDING
Associate Range Examiner, U. S. Forest Service Ogden, Utah.

Almost everyone likes wild game. The swift bounds of the startled deer, the sudden flight of blue grouse in the piney woods and the mating call of the bull elk echoing through the September hills, create a thrill for him who is fortunate enough to be present to see or to hear. There is more romance in the outdoors and more sheer joy in being there when it is known that game is lurking near. There is much satisfaction in knowing game is not vanishing and that out in the mountains and forests wild life is being preserved. To many, the opportunity to go into the hills on a hunt during the open season on game is a valued privilege.

And so it is with elk. Old Wapiti has always been a favorite with the wild game lover. Elk were native to the northeast portion of Utah and through the Wasatch Mountains, at least as far south as Sanpete Valley, and were often seen there during the early pioneer days of the State. They were gradually killed off until the only remnant of native elk now in Utah consists of a herd of about 70 which ranges in the Uinta Mountains on the Ashley and Wasatch National Forests. For a number of years this herd has been stagnant. (See Table 1.) Calves are not being produced fast enough to more than replace the mature elk that die. Whether cattle have carried contagious abortion to the mountain ranges to afflict their wild cousins, whether the old bull elk have strength enough to fight the younger bulls away from the cow herd, but yet are impotent due to the sterility of old age, or whether poaching or some other cause prevents satisfactory increase, are matters of conjecture.

A number of years ago to the citizenry of Utah came the realization that the elk had mostly disappeared from the hills, and there was a wide-spread desire to have them replaced. Opportunity knocked in the form of an offer from the Bureau of Biological Survey of the Federal Government. They agreed to ship elk from Jackson Hole in Wyoming, for stocking purposes, if the cost of capturing and shipping the elk were repaid to the Government. The idea appealed. Stockmen and sportsmen alike became enthusiastic and took steps to have the elk delivered and released in the mountains.

The elk thrived on the Utah ranges. In the high alpine zone with its grass and weed parks interspersed with clumps of spruce and alpine fir, in the aspen and fir zone with its variety of weeds and browse, and



Elk have always been a favorite with the wild game lover.

in the mountain mahogany and browse-covered lower slopes the elk found an excellent wintering place. The first plant was made in 1912 when 10 head were turned loose in Salina Canyon. In 1915, 23 head were released in the vicinity of Logan Canyon, and during that general period plants were also made in Manti Canyon on the Manti National Forest and in the Mt. Nebo Division of the Uinta National Forest. A few years later another plant was made in the Kolob Mountain area near Cedar City on the Dixie National Forest. In 1928 a plant of a few elk was made in the region around the head waters of Ogden River and in Parley's Canyon east of Salt Lake City. At most of these places the elk have made a remarkable increase, as is shown in the following table:

**TABLE 1**
**Elk Grazed on National Forests in Utah**

| Forest | Origin of Herd | Close of 1920 | Close of 1925 | Close of 1929 | No. Killed by Man 1925 | No. Killed by Man 1929 |
|---|---|---|---|---|---|---|
| Ashley | Native | 67 | 52 | 53 | None | None |
| Cache | Plant | 100 | 283 | 510 | 100 | 70 |
| Dixie | Plant | None | 6 | 125 | 5 | 5 |
| Fishlake | Plant | 85 | 264 | 356 | None | 9 |
| Manti | Plant | 98 | 445 | 935 | None | 18 |
| Uintah | Plant | 300 | 502 | 650 | 110 | 258 |
| Wasatch | Native | 13 | 12 | 19° | None | 1 |
| TOTALS | | 663 | 1564 | 2648 | 215 | 361 |

°Few head planted in 1928.

With the increase and spread of the elk came a different reaction to their presence on the ranges. The stockmen began to realize that much of the forage the elk used was the same kind that cattle and sheep used and that several hundred elk on a range made an appreciable decrease in the amount of forage available for domestic stock. One must keep in mind that in Utah there is an intensive demand for all available range forage. The numbers of stock grazed are limited principally by the carrying capacity of the range, and there are few places where the accessible ranges are not stocked to or beyond capacity. Range values are based, to a considerable extent, upon the attendant opportunity to graze livestock on nearby ranges. This situation must be understood before the viewpoint of the stockmen can be appreciated. In the abstract the grazing of a few hundred less cattle and sheep on a range seems a minor thing, but to a community or group of small livestock men using that range, it is a matter of vital importance.

There have been reported cases of elk depredations along the foothills adjacent to the mountain ranges inhabited by them. The State Fish and Game Commission now has authority to kill not more than 25 head in each of the major herds in the state where damage is being done by the elk, and where there is good reason to believe that if this authority is exercised, and the elk causing the damage, or at least the leaders, are killed at the haystack, orchards or fields they molest, the depredations will be largely stopped.

A strong sentiment in favor of the elk developed in the state and the work of harmonizing the various viewpoints and of effecting management plans promised to be a task requiring considerable wisdom, forethought and fairmindedness. A State Game Refuge Committee was appointed to accomplish the task. The State Fish and Game Commissioner was made chairman; the other members to consist of a representative each from the fish and game associations, The

Cattle and Horse Growers' Association, The Sheep and Woolgrowers' Association, the United States Forest Service, The State Public Parks Commission, and a county commissioner from the county in which the problem under consideration was located. The creation of this committee, which was accomplished in 1927, was one of the most important and progressive steps in game management in the history of the state, not only because of its success in handling the elk situation but also because it sets a worthy precedent for one satisfactory way of handling the larger problem of deer management in Utah.

The committee has a number of management problems to work out, among them that of proper numbers of elk in the various herds. The problem is not to eliminate the elk entirely nor to greatly reduce their numbers. Few people want that. The problem is rather to regulate the number and size of herds so that they may be seen occasionally and may provide a reasonable amount of hunting without becoming so congested as to cause injury to the ranges and watersheds, or to unduly conflict with range use by domestic stock. The committee knows how many elk there are in each locality and has decided what a proper number should be. The next question is how to reduce the herds. Capture, crating and shipping is too costly as a general practice, though some has been done and more will no doubt be done in the future, to obtain elk for stocking new ranges in the state. Driving elk from the places of congestion to other desirable range has been tried without success. A group of men worked hard for several days trying to drive elk from the Mt. Nebo region and the net result of their labors was to find out that it could not be done. An open season on the elk with a specified proposed kill has been decided upon as the logical solution in most cases. Persons to whom licenses should be given have been decided by lottery. A fee of $10.00 has been charged. Hunting has been organized on a controlled basis and by close checking up, poaching has been prevented.

The plan has worked out well and the herds have been properly reduced a number of times. In some instances the killing of a few cows has been agreed upon and permitted as a necessary measure in proper management of the elk. It would be a better plan, however, to determine quite closely the average yearly increase of each herd above the desired number of the herd and permit enough hunting each year to keep the number about constant. This plan should permit killing a few cows along with the bulls from year to year if necessary, rather than to allow the increase to accrue over a period

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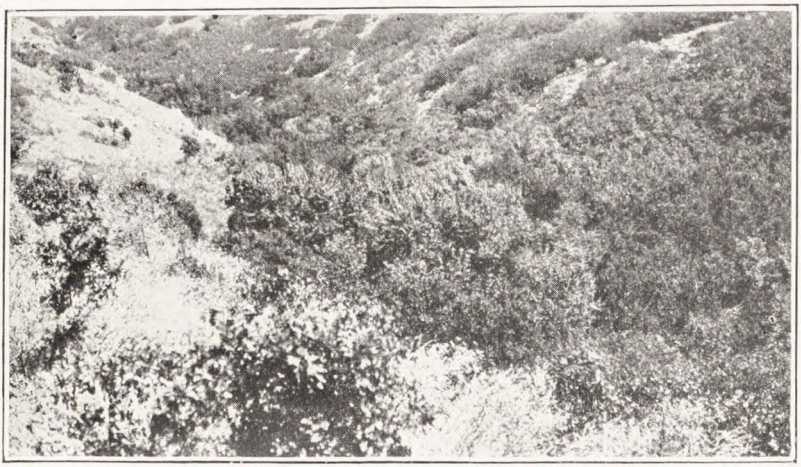
# Plants Versus Floods

By R. J. BECRAFT*
Associate Professor of Range Management

Our department of Forestry and Range is interested in major problems in conservation and utilization of natural resources—land, timber, grazing, watersheds. With many communities dependent upon water supply for their very existence, the watershed problem assumes large importance. Accordingly, various agencies have directed much effort toward establishment of proper protection of watersheds.



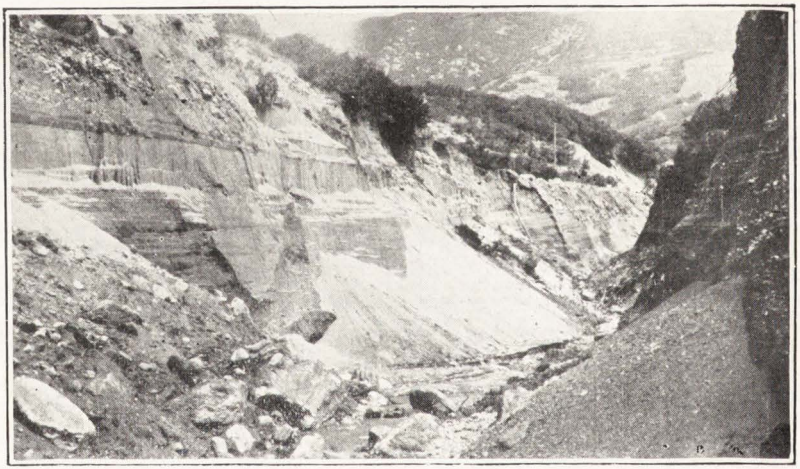
View near mouth of Centerville Canyon, the headwaters of which are fairly well vegetated. This canyon produced high water after each storm but no devastating floods. (Courtesy, Utah Agricultural Experiment Station)

It is generally understood and accepted that "watershed protection" means maintenance of a good plant cover on the mountain slopes which contribute to this water supply. However, the nature of that "protection" is not generally given much thought—"protection" of the plants to insure permanence of their cover, and "protection" which the plant cover in turn affords against quick runoff in ordinary storms and against flood damage in violent storms. We still have much to learn concerning various phases of the problem. However,

*The writer's contact with this problem became possible through a cooperative study conducted with C. L. Forsling, Director Intermountain Forest and Range Experiment Station (Forest Service) and R. W. Bailey, also of the Utah Agricultural Experiment Station.

if experience is a good teacher, we should profit by a most excellent lesson which is readily accessible.

The flood disasters of the Farmington-Centerville section, Utah, present a startling illustration of this relationship of forest and other plant cover to erosion and floods. Steed, Davis, Ford, and Parrish Canyons were heavily flooded four successive times in the summer of 1930, and the same locality once in 1923. Resultant damages included demolishing of several houses, surfacing of many acres of garden and farm lands by mud and rock including boulders weighing



Gorge near mouth of Ford Creek, where the 1923 and 1930 floods added some 40 feet of new depth in previously undisturbed Bonneville sands and gravels. (Courtesy, Utah Agricultural Experiment Station)

individually up to 200 tons, blocking of the state highway and the electric railroad, and in 1923 the loss of several human lives.

In September, 1930, Governor George H. Dern appointed a Flood Commission of seventeen men "to study the origin and cause of the floods and to ascertain whether or not any flood prevention measures are feasible." Their report was published by the Utah Agricultural Experiment Station as Circular 92, an illustrated pamphlet of fifty pages: "Torrential Floods in Northern Utah, 1930".

The Commission centered their attention on the Farmington-Centerville section. They concluded that the cause of the floods were: (1) "uncommonly heavy rainfall", (2) "topography and geological conditions favorable to sudden runoff", and (3) "scant

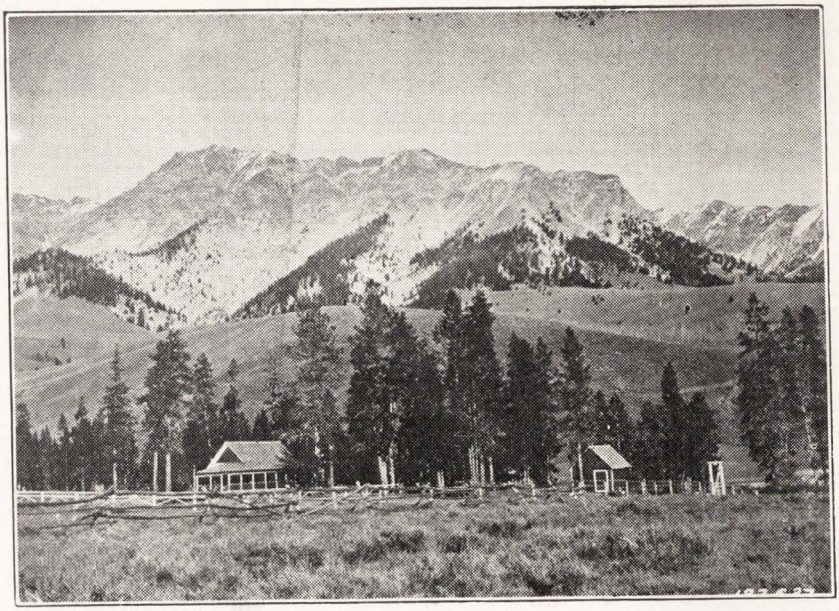
vegetation on portions of the watersheds". The report discusses these causes in detail. The storms were doubtless intensive, yet comparison with accurately measured precipitation and runoff elsewhere indicates that they may be duplicated in different localities, though at rare intervals.

The vegetation, largely dense brush, had been depleted in the

Debris deposited by Parrish Creek. The largest boulder weighs approximately 200 tons. (Courtesy, Utah Agricultural Experiment Station)

heads of the canyons by overgrazing and fire, and the relation of the plant cover to accumulation of the flood waters is shown. The significance is shown of the huge proportions of the new flood channels and deposits as compared to the smaller geologic features which represent the normal erosional activity of the past. The report is specially deserving of public attention because it presents the findings of a commission which included engineers, geologists, foresters, botanists, range men, livestock owners, and business men.

Persons interested in watershed protection are urged to visit these canyons. The fresh flood channels lead to the upper basins where the slopes display alternating patches of plant cover and gullied "bare" spots which disclose the origin of the floods. Elsewhere have occurred numerous floods attributable to various causes, but this particular demonstration is exceptional in that it provides a clear-cut case where plant depletion made possible floods of such disastrous proportions.



High Country.

In checking up on our graduates of last year, Deloy Hansen and Adelbert Fausett, we find them married and working for the Forest Service. "Dee" is located at Panguitch, Utah, while "Dell" is at Quincy, California. Since the last issue of the Utah Juniper was published, two more of our men, "Dick" Julander and "Eepee" Cliff have been engulfed in the sea of matrimony. We wish them success in their new venture.

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"What drove the lookout's wife crazy? Loneliness?" Not exactly. She was listening in on the radio while a big dry goods store was describing a bargain sale for the next day."

---

He is so dumb that he thinks medullary rays is some kind of sunshine.

---

The story comes in from the Cache bug burning job that one of the bug fighters, covered with oil, was met one day by a girl riding somewhat in advance of her party. It seems their greetings were simultaneous so that the girl failed to hear the reply to her greeting.

"You no speak the English?" she inquired.

THE
UTAH JUNIPER

VOL. 2 1931

# The Staff

Owen M. DeSpain ..... Editor
Chas. M. Genaux ..... Faculty Adviser
Wallace M. Johnson ..... Business Manager
Dean M. Earl ..... Assistant Business Manager

## *TO OUR READERS AND CONTRIBUTORS*

*The editor sits at his desk all day*
*And pulls his hair and scribbles away,*
*"No paragraph here, put a period there."*
*No wonder he squirms in his old arm chair!*
*And this is all the thanks he gets*
*"Isn't the Juniper published yet?"*
*Well, here she is, our work is done*
*It has been some job, but lots of fun.*
*We hope you will like it from end to end*
*And remember dear reader that your best friends,*
*Are our Contributors*
***And our Advertisers.***

*The Editors.*

# The Utah Foresters

By COURTLAND P. STARR, '31, President

This year marks the most successful year the Club has known since its beginning, two years ago. Because of the increased enrollment of freshman foresters, membership in the club soared to over fifty members, which is a record enrollment. The "timber beasts" and "daisy pickers" buried the hatchet once more as the Club became active this fall and a tentative schedule of events was arranged for the ensuing school year.

So far this year the calendar of the Club has included such events as the Canyon Barbeque, Foresters' Banquet, an address to the Club by E. C. Sanford, of the Regional Office on the subject of "Methods of Control of The Mountain Pine Beetle," the Foresters' Ball, and recently an address by Supervisor Rice of the Payette National Forest on "What the Forest Service Requires of a Temporary Employee."

The program for the remainder of the school year is to include a planting program on "A" day, a moonlight hike into the hills, the appearance of the "Utah Juniper", and several lectures to the club on specific forestry subjects.

The Forestry Club has cooperated with the Ag Club in several instances. Each year the club elects an editor and a business manager to handle the Foresters' section in the "Utah Beehive" which is the Ag Club quarterly publication. The club also expects to cooperate with them in staging the annual Ag Club Rodeo held in the spring.

The Memorial grove was planted three years ago in tribute to the memory of the Aggie soldiers who died in the World War. This grove is attended each year, replacement plantings being made where dead trees occur. It is planned that the dedication of this grove and its presentation to the school be made on November 11, 1931, by which time the grove will have become permanently established.

The members of the club are grateful to the Regional office members and also to the Cache Forest officials for the splendid interest shown and cooperation given them in carrying out club activities.

Utah Foresters 1931.

Kneeling, left to right—"Val" Bentley, Ivan Anderson, Milton Wright, "Twink" Starr, "Dick" Julander, "Shaler" Schott, "Milt" Sill, Clark Anderson, "Don" Wadsworth.

Standing, left to right—Dean Earl, "Joe" Cummings, Prof. "Ray" Becraft, "Rudy" Van Kampen, Clarence Thornock, Frank Fonnesbeck, "Walt" Astle, "Slim" Hansen, "Eepee" Cliff, George Young, "Wally" Johnson, "Desprit" DeSpain, "Chuck" Michaels, Prof. "Charlie" Genaux, Glen Hemstreet, "Mike" Steed, "Stoneheart" Frandsen, Prof. "T. G." Taylor.

# Foresters' Barbecue

By WALTER ASTLE, '33

The Foresters' canyon party was held on Saturday afternoon, October 18, 1930. We met in front of the forestry building at 1 P. M. where we got into cars supplied by the Professors and some of the students. By one-thirty we were ready to leave and we headed for the hills.

We went up Logan Canyon to the camp grounds at the foot of the Old Juniper Trail. As soon as everyone had arrived the fun started. Owen DeSpain the chief cook, and his helpers unpacked the grub and began to get it ready while the rest of us prepared for a trip to the Old Juniper.

A long line of boys was soon moving up the trail with a great deal of speed and enthusiasm. They hadn't gone far before they decided that the trail was too steep and the weather too warm for such speed. From then on the pace was slower and marked by frequent rests. At length after much puffing and sweating we all reached the top and surveyed the old monarch. Charlie Genaux, looking at it for the first time, seemed to think the poem he wrote last year suited very well. We all agreed that the climb was well worth while and returned to camp.

By the time we arrived, Owen had the steaks and coffee ready and we fell to with a will. The continual return for more and the words of the boys paid adequate compliment to the genius of our cook.

As soon as all were satisfied the fire was built up and we all gathered around. Dick Julander, as the representative of the Forest Service, spoke first. When he had finished his accusations, the Profs. were each given a chance to defend themselves, which they did very well. Several of the boys were then called on to express their opinions. A period of introductions and stories followed. When each had had a chance to express himself and had told his best story the party broke up to the tune of cheers led by the frosh. We then climbed into the cars and went happily homeward.

———o———

Slim—"Kisses are the language of love."
Co-ed—"Well, why don't you say something."

———

Val—"I called at the secretary's office to collect my five dollar military suit deposit. Boy, I had to argue back and forth with that guy for half an hour or more and finally he told me to go to hell, so I went on over to the Military department and——"

# The Foresters' Ball

By DEAN EARL, '32

The annual Foresters' Ball was held the evening of February 2 in the women's gymnasium. The idea of frontier days was duplicated in costumes and decorations. The room was partitioned off into a dance hall and a bar-room.

The bar-room was decorated to represent one of pioneer times, with trophies of the hunt adorning the walls. On the floor in front of the bar was the famous "face on the bar-room floor," drawn by our forester-artist, Val Bentley. The room contained card tables where instead of the old time games the more modern ones, such as bridge, were played. Punch was served in bottles in regular "forty-niner" style. The dance floor was bordered with junipers and logs giving it an out-of-door atmosphere.

A prize was given for the best frontier costume. Ed Cliff and his partner, Katherine Mitchell, were awarded the prize. They were dressed as old Mormon pioneers and were unanimously pronounced the winners.

About twenty-five couples were in attendance and proclaimed the third annual ball a complete success.

# Third Annual Banquet

By MARRINER SWENSEN, '31

On the evening of November 22, the Utah Foresters held their third annual banquet at the Hotel Eccles. Courtland P. Starr, President of the club, expressed appreciation for the support of those who were in attendance and welcomed everyone. He then turned direction of the evening's events over to the toastmaster "Slim" Hansen. "Slim" showed up well in this capacity.

About fifty members of the club attended the banquet and became acquainted or reacquainted with members of the regional office at Ogden. Other visitors included the Cache National Forest personnel, Dean F. L. West of the U. S. A. C. and K. C. Ikeler, former dean of agriculture at the college, now manager of the Union Stock Yards at Ogden. The spirit of good fellowship was enhanced by the excellent food which was served.

After eating, (Slim kindly forgot to announce toasts while the

banquet was in progress) some of the guests gave short, entertaining and instructive talks. First heard from was Supervisor C. B. Arentson, of the Cache National Forest. "Carl" indicated that he was behind the Department of Forestry at the College and was interested in seeing the department turn out creditable foresters.

C. N. Woods, Assistant Regional Forester, in charge of operations, told of personal experiences centering around the time when he entered the Service. Mr. Woods drew some interesting comparisons between the service as it was under the direction of the Department of the Interior and as it is at present administered under the Department of Agriculture.

Mr. R. E. Gery, Assistant Regional Forester, in charge of Lands, called attention to some of the more pressing problems that are coming up before the Service. He suggested that the man who is trained in the work is the fellow who will help solve these problems.

Former Dean Kenneth C. Ikeler gave an entertaining account of his early experiences as a stock judge and a lecturer in the interests of better breeding and stock production in the South.

In response to a call from the toast master, T. G. Taylor, Head of the Forestry Department at the College, made a few remarks on the growth and work of the Department and incidentally added a good story or two to the entertainment of the evening.

To introduce the speaker of the evening or to soothe his trembling spirit, or possibly for some other purpose, a quartet of foresters was announced at this point as having a small contribution to make to the evening's pleasure. They sang "Nut Brown Maiden."

L. F. Watts, Senior Silviculturist at the Intermountain Forest and Range Experiment Station, and former Head of the Department at the College, gave the address of the evening. He touched upon the professional aspect of the forester's training, stressed the desirability of proper ethics, and urged the students to be honest and honorable in their school work because the attitude and spirit of the class room is carried out into the field of service. Mr. Watts commended the club and stated that in as far as it held to the proper ideals it would be a necessary asset to the department and the school.

The group adjourned to one of the large sample rooms of the hotel where a few snappy stunts made a half hour or so of good entertainment and the third annual Foresters' Banquet entered history as one more successful event.

## TO A LOOKOUT

They say a lookout's life is dull
But this I cannot see,
Because there never comes a lull
In his expectancy.

He sits on high among the crags
Of God's wild out of doors,
And holds the key within his grasp
Of Nature's bounteous stores.

On him depend the life or death
Of beast and bird and tree.
And if he fails there's nothing left
But waste from sea to sea.

And so in closing may I say
That this young man on high,
Desrves more credit than his pay
May seem to justify.

**Wallace M. Johnson '33**

# The Wanderings of a Lookout's Mind

By CHARLES C. MICHAELS, '33

Montana Diary

Standard Mt. L. O.
July 4, 1930

"Hump—seven o'clock-ah I could stretch a mile if I was sure of a ride back—Oh yes, must report "(long and one short)" Hello, Big Creek, sure we're still alive. Say, what's the date? Oh yes, the fourth, which reminds me, you forgot that order of vanilla. Ye—well, none of your business! Say I'm going to the water hole. Oh ya—say if you had that three mile trip you'd moan too—sure-well, keep your nose clean—ditto" "Bang".

(And now children picture for yourself—the sun was up—and was hot. The trip to yon water hole is not bad, but, an hour and a half has elapsed; our lookout man is well on his return trip sweating under the burden of a 40 pound man pack—attention please!) "Puff-puff-puff-hum-oh---oh---just a minute lady—say who? puff-puff-scramble-scramble———oh—what a handy tree whew! Oh lord, moma and her two kiddies-how sweet—Damn!"

(Now let us leave our man in great agitation, wrapped, not at all gracefully, about an 8-inch, lodge pole pine—mama grizzly—tires of the sport at hand and wanders off in the immediate vicinity, but not so the kiddies, nay not so! For a period, of four hours, the

(Continued on Page 43)

# Hot Air Mail

From WILFORD L. HANSEN, '31

Dendroctonus Territory
Cache National Forest
6-10-30.

Dear "Despin":

Just a few days after writing my last letter to you, the supervisor of the Cache National Forest called me on the phone and asked if I wanted to go to work. I told him that I hadn't had any money to worry about for a long time, but wouldn't mind having that experience again. He said they were doing some insect control work on the north end of the forest, and that a car load of equipment was going through from Ogden, Saturday, May 10, and that they would pick me up on their way.

Saturday morning at eight bells, I was pacing the floor. My back pack was sitting by the door, bulging under the strain of having to surround a few of those articles that are seldom worn by South Sea Islanders. The Ford arrived in due time (about noon) and the remaining half of the day was spent standing down on the gas. After being run off the road by a horse and buggy as it rushed past us from the rear, and very nearly tipping over in the final stretch of a long race with a road grader, we arrived at camp just in time to save the cook the trouble of cleaning the supper table.

The next morning at seven, the cook announced that if we didn't come and get it, he would throw it out. Well, he didn't have to throw anything out; in fact, the truck driver's dog received scanty rations for breakfast.

Immediately after breakfast, we started work, and it was then that I realized that the human race must truly belong to the animal kingdom. And it seemed to have fallen to my lot to belong to that lowly group referred to as "beasts of burden". But I felt somewhat comforted because there seemed to be about twenty other fellows in the same class.

Those forest officers who I thought were my best friends, carried an unreasonable number of metal tanks out of the supply tent, and each of them was filled with about three and one-half gallons of fuel oil. Each of us was given one of these tanks, and a hand ax. The tank was draped over one shoulder by means of a sling strap attached to the side of the tank; the ax was tucked under our belt. Then we started what seemed to be a race up the side of the mountain. We got a pretty even start, and I was placed next to the compassman.

I didn't know why he was using a compass instead of carrying a tank of oil, but I couldn't be bothered to worry about him, for I had all I could do to get over the brush and logs and keep up with the other runners.

I was getting pretty tired and was wondering when we would get a five, so that I could get the tank off my back. In fact, I was beginning to look for a good place to hide when a fellow over to my right let out an awful howl. The compassman shouted "HOLD THAT LINE", and I settled to the ground, right now, to make sure that my part of the line would be held. I was enjoying the rest so much that I didn't even worry whether that fellow had broken his leg or not. I simply craved rest, and that was what I was going to get. When I finally did look over that way, I concluded that I was an egg for sure. The oil in the tank was apparently to be used for something other than just weight. Several of the fellows were spraying oil on the trees (yes, the tanks had pressure pumps and hose attached to the top), setting them afire and then driving the fire up the tree by spraying more oil onto the flames. I watched for a few moments, then grabbed my tank and headed that way, but the compassman called "FORWARD" so I had to do a left turn and continue up the hill. The next howl came from the left, and I just swung around and headed that way. One of the fellows was going around hacking into the trees with his ax, and occasionally blazing one. I did a few rapid mental gymnastics and concluded that those trees were to be burned; and Oh! how I did spray oil. With each succeeding tree burned, the tank became lighter, and finally the hissing of air through the nozzle of the hose indicated that the oil was all gone.

What a relief! At last I could sit down. I went over to a fellow who had been following along behind us, leading a string of pack horses. I was comfortably seated on an old log and was wondering what he would like to talk about, when he came over, picked up my tank, and went back to his horses. I didn't mind if he did carry the tank for me, so I said nothing. But horrors! In about two minutes he brought the tank back, and it was chock full of oil again. I felt tempted to develop my pugilistic instincts, but he was full grown, and I didn't want to start a fight, so I shouldered the tank and headed back toward the trees. But just my luck, the compassman yelled "FORWARD", and I had to tote that tank load of oil up the hill.

(Continued on Page 41 )

# All In The Life Of a Fir Tree

By COURTLAND P. STARR, '31

A low, resonant sound, filled with throaty richness, came floating down. High on the peak the wolf sat, a flood of moonlight drenching the rocks on which he was silhouetted against the skyline. His sleek body reflected the light in dancing, silvery beams. Again he lifted his nose to the moon and uttered that same low-throated call.

It was the leader calling his pack. Turning his head, he gazed long at the moon-lit valley below. Gaunt shapes and shadows flitted to and fro across the opening. A faint, far-a-way chorus of throaty barks arose from the plain below. It was the answer. The pack had heard and heeded his call.

Every muscle rippled under the skin as with lithe movement he arose and turned to the trail down which the pack waited. Gaunt and ready they watched. Some were growling, in low tones, their impatience to be away. Others stood in keen watchfulness of the trail ahead. Others still, rubbed noses in a friendly fashion.

Softly out of the shadows, came the leader. He stood shoulders above his followers—a giant of his species. With a low growl of command, he headed down the trail to the left, running at an easy, loping gait, the tireless although mile-consuming pace of the wolf. Behind him ran his pack in close, orderly formation.

Down hill, up incline, over stream and bog, they ran. The miles wore away under the steady padding of numerous paws. With a sudden halting, the big wolf swung round and gazed fixedly toward the east, his ears moving in opposite rythm. Hushed were the guttural noises of the pack. They too now intently watched the east. Then, as with one voice, they uttered a cry—the cry of the hungry pack. The grey bodies moved off into the darkness at a full run. The chase was on. Now was the chance to kill. They were on the trail of the deer. The kill being made, they would feast.

Gently working his way up through the fir and aspen trees, a lone buck fed, now and then lifting his head to listen or to gaze out over the hillside below him. In the act of lowering his head for another luscious twig, his body became tense. Nervously he listened to the rustle of the aspens.

What was it that he had heard? Why did he not hear it again? Gazing searchingly down the mountain slope, his eyes became fixed on a moving grey mass that swept out into the moonlight from the

cover of the pines. Startled and quivering, he stamped the twigs beneath his feet. He watched the grey bodies swing onto his trail at the bottom of the slope, hesitated, then with a bound, cleared the immediate bush in front of him and swept forward and upward at a jagged, hurried run. As he crashed against the brush with his body, he seemed to settle into an even, steady lope. From time to time he could hear the cry of the pack, each time the nearness of it spurring him on to still greater effort. He swung zigzagedly up the hill. Crossing the divide and swerving to the right he took a course on a tangent to his trail. The pack he could not see but the sound of their coming was ever closer.

He was tiring now. His wind came in mighty blasts from those fiery nostrils. Trembling with fright and fatigue, he slipped into an alcove and hid himself behind a huge fir tree as best he could. With his back to the wall he must fight. To go down seemed inevitable, yet fiercely he wanted to live.

The sound of the onrushing grey forms drew sharply nearer. The wolves showed momentarily at openings in the forest. Now they burst upon the thicket, behind which the antlered deer sought shelter. They halted and drew back as the buck rushed at them, hoofs slicing the air as he struck at his attackers. They sat on their haunches in a ghastly, weird semi-circle around the fugitive, none daring to come close enough to draw the penalty of those flashing fore-feet and spear-like antlers. So they waited, waited as if for a signal from their leader. The leader sat straight on his haunches apparently looking past the buck at the moon.

Suddenly, with a side-twisting motion of his body, he flashed in to the attack. Taken unaware, the buck struck out, but too late. The grey form had struck straight and true. His mighty jaws gripped the throat of the deer. He hung on, slicing, ripping, yet surely cutting his way to the life blood. With a vicious wrench, he tore loose and sprang back.

The deer staggered this way, and that. The blood streamed from a jagged hole in his throat. His breath came in harsh, raspy gulps. Slowly weakening, staggering, he sank to the ground. With one convulsive movement the great, grey body became still.

A fierce, blood-curdling cry rang out from the leader of the pack. It was a triumphant cry—the cry of the killer. With the last echoes of that fierce cry the circle began to stir. A rush of bodies, and they were tearing at the warm flesh of the buck. Crowding and pushing, they growled savagely at one another as they gorged them-

selves of the meat.

Again the moonlight and silence reigned over the shadows of the mountains. The tragedy of the fir tree was forgotten. The moon sailed on with its never-ceasing smile.

## IT'S COMIN' FALL

When the aspen leaves turn yellow
And the maple scarlet red,
It often makes ya' wonder
Why more poets haven't said
A little more about the fall
And autumn-colored hues.
I think that's just what I'd a done
Had I been in their shoes.

If ya' sit along the canyon rim
And gaze across the way,
You can see the red-leafed sumac
Minglin' with the sage brush gray.
Then on farther up the mountain,
Nature's paintin' still is seen,
Where the yellow of the aspen
Mixes with the evergreen.

Then's the time that woolen blankets
Feel good scratchin' on your hide,
When the cold wind moans and whistles
In the pine trees just outside.
An' ya' tuck the blankets closer
When the coyote hips his call.
Ya' can hear the leaves a rustlin'
And ya' know it's comin' fall.

Odell Julander '31

Ranger—"Would you rather a bear would eat you or a lion?"
Charles M.—"I'd rather he would eat the lion."

A lady tourist driving along a forest road came suddenly upon two repair men climbing telephone poles.

"Fools!" she exclaimed, "they think I never drove a car before."

## RESEARCH BY THE FOREST RANGER

(Continued from Page 6 )

been said that one of the big problems in the Forest Service is to get application of existing information. Actual application of what is already established as good practice lags far behind the finding of the facts. This is not surprising when one considers the diverse nature of the work. Reports, bulletins, and other publications come to hand in such volume as to preclude careful analysis of all by each individual. This leads to habitual carelessness in the review of printed information until much of it, badly needed by the man, finds its way into the files either unread or understood only in a hazy way. Participation in one or more research studies stimulates interest in those particular fields and leads to more careful analyses of related material. The ranger who has a series of lodgepole pine thinning plots is interested in any work in this field of knowledge. Careful study of a report on thinning yellow pine appeals to him and this may lead to a study of some method-of-cutting report and perhaps to more knowledge about the question of insect infestations, all of which affects the way in which the ranger selects trees for cutting on his timber sale area. Participation in research certainly stimulates a desire to understand what the job is about and spreads from one phase to another.

The management of a forest differs from the management of a farm in that the use of the forest is by numbers of people while the individual farm is by few people. Nearly everyone in the National Forest regions is concerned with some aspect of its use. To one it is a recreational center, to another it is a pasture for livestock, and to a third it is protection for his water supply. Each is primarily concerned with his own phase and jealous that some other use does not injure his. The enthusiast would prohibit all uses except his pet purpose. The ranger visualizes all of these uses coordinated and made to function in unison. The smooth administration of his district depends on the extent to which his views are generally accepted by all persons concerned. There is perhaps no better means of putting his views across than by actual demonstration areas where he who will may see. The lodgepole pine thinning plots may be the real way to convince the recreationist that timber cutting does not necessarily mean curtailment of his pleasure or it may convince the water user that proper cutting of timber actually benefits the water supply.

The grazing experiment will help to demonstrate to the sheepman what proper use of the range means to him and to his neighbor.

The selection of a project or projects for range research is important. It is very easy to choose some phase that will require entirely too much time for the ranger to follow through. Again it may be of such character as to call for highly scientific methods. The projects to select are those within reach from the standpoint of time and training. Generally, a project should either be one in which the man has a strong personal interest or one which is vital to the proper conduct of his work. That project which combines these two qualifications is sure of aggressive and sustained attention. Projects from which results can be secured in a short period of time are better than long time studies and those of local application are of more interest than the hypothetical case bothering some one else.

The extent to which assistance and direction is necessary will depend on the man and on the type of project. It is clear that all such work should be under the direction of one or more men for the entire region. This central agency can exercise such control over pro-

Grazing experiments will help to demonstrate to the stockmen what proper use of the range means to him and to his neighbor.

jects as seems expedient. In any event every project should be in accordance with a written plan approved in advance to avoid poor selection of work and improper procedure.

Approval of the plan should not end the responsibility of the coordinator. Enough actual help on the ground must be given to make sure the man fully understands what it is all about and how to proceed. No matter how detailed the written instructions may be, there is always a possibility of incomplete understanding and perhaps of a serious waste of time.

The field of research in wild land managment is so new and so large that there is urgent need for the widest possible participation. Assistance by forest rangers is particularly to be desired both from the standpoint of personal growth by the ranger and from that of speeding up the program and of advancing the degree to which existing knowledge is applied on the ground.

---

*Handing 'em Back*

The dance seemed endless. At last, the music stopped and they started off the floor. In desperation, he remarked "I certainly enjoyed that dance with you."

She—"I wish I could say the same for you."

He—"You could if you were as big a liar as I am."

---

"The consideration of elapse of time is important because you have to figure how much time it will take for every elapse and hurry things up."

---

Ranger—"Have you ever rode a horse before?"

Wally—"No."

Ranger—"Good, here is one that has never been rode. You can break each other in."

---

"The Irish convict had missed an article of his personal kit. He demanded an interview with the warden. The favor was granted.

"Sorr," he began, loudly, "there's a thief in this prison."

---

1st Co-ed—"I don't like that Slim Hansen."

2nd Co-ed.—"Why?"

1st Co-ed—"Well, he asked me if I could whistle and I said 'Yes'. Then, when I puckered up my lips, he let me whistle."

# Roll Call

## FRESHMEN

Best, Edgar ..... Springville, Utah
Ellison, Donnel ..... Nephi, Utah
Fonnesbeck, Herman ..... Logan, Utah
Van Kampen, Rudolph L. ..... Ogden, Utah
Allen, Wayne ..... Teton, Idaho
Kropfli, Walter George ..... Logan, Utah
McDermaid, Farris ..... Logan, Utah
Jackson, Gerald ..... Beaver, Utah
Hemstreet, Glen ..... Vernal, Utah
Wright, Milton ..... Blackfoot, Idaho
Seely, Hugh ..... Castle Dale, Utah
Tucker, Bert H. ..... Salt Lake City, Utah
Robins, Mont ..... Eden, Utah
Orgill, Fred ..... Logan, Utah
Rowe, Bert ..... Logan, Utah
Okerlund, Dent ..... Salina, Utah
Woods, L. G. ..... Ogden, Utah
Harris, Newman ..... Logan, Utah
Thatcher, Reed ..... Riverdale, Idaho

## SOPHOMORES

Johnson, Wallace M. ..... Ogden, Utah
Sill, Milton ..... Logan, Utah
Burt, John Edward ..... Ogden, Utah
Fonnesbeck, Frank O. ..... Logan, Utah
Thornock, Clarence S. ..... Bloomington, Idaho
Olsen, LeGrand ..... Preston, Idaho
Michaels, Charles C. ..... Ogden, Utah
Carlson, Leland ..... Logan, Utah
Larson, Waine L. ..... Garland, Utah
Farnsworth, Howard ..... Beaver, Utah
Van Buren, Gordon ..... Ogden, Utah
Anderson, R. Clark ..... Provo, Utah
Wadsworth, James ..... Logan, Utah

## JUNIORS

DeSpain, Owen ..... Venice, Utah
Earl, Dean M. ..... Nickerson, Kansas
Steed, Alvin V. ..... Ogden, Utah
Anderson, Ivan ..... Ogden, Utah
Schott, J. Dale ..... Ogden, Utah
Young, George ..... Wellington, Utah
Astle, Walter ..... Logan, Utah
Frandsen, Waldo ..... Price, Utah

**SENIOR CLASS**

| | |
|---|---|
| Starr, Courtland P. | Springville, Utah |
| Cummings, Jos. D. | Brigham, Utah |
| Hansen, Wilford L. | Richfield, Utah |
| Julander, Odell | Logan, Utah |
| Bentley, Valentine I. | Provo, Utah |
| Cliff, Edward P. | Heber, Utah |
| Swensen, Marriner | Logan, Utah |

Ranger—"Don't worry, there are plenty of fish in that stream."
Twink—"Yes, and I'm the fellow that left them there."

---

Guide in city—"To your left you see the city's largest sky-scraper."
Old Lady—"Oh, I would like to see it work."

---

Ed—"Girls want a lot now-a-days."
Slim—"Yes, and they want a house on it too."

---

Warden—"Why have you come to prison?"
Prisoner—"Competition brought me here."
Warden—"Competition?"
Prisoner—"Yes, I made the same sort of bank notes as the government."

---

Twink, speeding through an Idaho town was stopped by a traffic cop.
"You broke one of our traffic rules," roared the cop.
"Well, can't you buy another one?"

---

Dale—"Why do you keep calling me Half?"
Alvin—"Well, Half-Schott."

---

Ranger—"They say a bear will run if you look him straight in the eyes."
Milton S.—"Yes, but which way will he run?"

---

Alvin—"Why did you wake me out of a sound sleep?"
Dale—"The sound was too loud."

## THE LAND ECONOMIC SURVEYS IN THE LAKE STATES

(Continued from Page 10)

standards of the U. S. Bureau of Soils describes the location and extent of each kind of sand, loam, clay and peat. The cover map shows the area of farms, both operated and abandoned. The percentage of each kind of soil which is under cultivation and the percentage of farm land which has been abandoned give a valuable index to the value of that soil for agriculture. A farmer seeking a new location can tell what areas to avoid and what areas are worth consideration.

A typical soil description on the map legend reads as follows: "Wallace Fine Sand. Original forest growth dominantly white and Norway pine. Present growth is poplar, white birch, soft maple, cherry and some spruce and tamarack. Less than 5 per cent cleared for farm land. About 40 per cent of the cleared farm land is apparently idle or abandoned."

*Condition of Forests.* The map indicates the type of forest, the size of the timber by 3 inch diameter groups and the density of

stocking: good, medium or poor. By means of sample strips, the volume of timber in the county is estimated.

**STAND TABLE**

Average Acre of Medium Stocked 3-6 Inch. Aspen-Birch Type on Rockwood Sandy Loam, Hubbard County, Minnesota—Based upon 7½ miles of Strip Survey. —Original Forest, White Pine.

| | Number of Trees | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| D.B.H. (inches) | Aspen | Birch | White Pine | Jack, Norway Pine | Balsam | White Spruce | Misc. Hard-woods (1) | Total |
| 1 | 157.5 | 93.2 | 3.7 | 10.1 | 1.6 | | 43.6 | 309.7 |
| 2 | 88.3 | 93.2 | 3.7 | 7.4 | .5 | .5 | 22.5 | 216.1 |
| 3 | 99.1 | 85.2 | 6.4 | 6.4 | 1.1 | .5 | 21.3 | 220.0 |
| 4 | 101.5 | 38.2 | 3.1 | 1.5 | 1.0 | | 16.5 | 161.8 |
| 5 | 62.7 | 11.9 | 1.1 | 1.3 | .3 | .1 | 6.2 | 83.6 |
| 6 | 36.6 | 4.8 | .9 | 1.9 | .4 | | 2.8 | 47.4 |
| 7 | 14.6 | 2.7 | .3 | 1.6 | .1 | | 1.3 | 20.6 |
| 8 | 7.9 | 1.5 | .3 | .7 | .1 | | 1.3 | 11.8 |
| 9 | 2.7 | .7 | .3 | .2 | .1 | | .7 | 4.7 |
| 10 | 2.1 | .4 | | .6 | | | .7 | 3.8 |
| 11 | 1.1 | .3 | | .1 | .1 | | .3 | 1.9 |
| 12 | .8 | | | | .1 | | .3 | 1.2 |
| 13 | .3 | | | | | | .3 | .6 |
| 14 | .1 | | | | | | .1 | .2 |
| 15 | | | | | | | | |
| 16 | .1 | | | | | | | .1 |
| 17 | .1 | | | | | | | .1 |
| Total | 575.5 | 332.1 | 19.8 | 31.8 | 5.4 | 1.1 | 117.9 | 1083.6 |

Minnesota Land Economic Survey—Lake States Forest Experiment Station, Cooperating

(1) Maple, Oak, Basswood, Elm, Ash and Ironwood.

*Soil and Forest.* The character of forest and rate of growth on various soils is indicated by measurements on sample strips. These figures indicate what trees are suitable for the various soils, the probable rate of growth and on marginal lands give a clue as to the most profitable use of the land.

*Recreation Inventory.* The cover map contains much information of value to the recreation seeker but in addition more detailed maps of many of the lakes are made on which the character of the shore is shown, its forest cover, the existing roads and the cottages, resorts and hotels which are there. Tallies are made of the game seen during the survey.

*Land Economics.* The ownership of the land, the purpose of ownership, the tax rates for each type of land and the tax delinquency for each type of owner are worked out from county records and interviews with township supervisors.

*Water Power Inventory.* Stream flow is measured during the course of the survey and estimates are made of the potential water

power and possible locations for dams.

*Geological Inventory.* Notes are made on the location of limestones, gravel, marl and shales which appear to have potential value.

This in brief is the scope of the Land Economic Surveys concerning which Colonel Greeley, when Head of the Forest Service, once said: "It is an example of what should be done in every one of the 39 states which contain important areas of forest land."

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## ELK PROPAGATION AND MANAGEMENT IN UTAH.

(Continued from Page 14)

of years and then to make a big slaughter. The heavy kills resulting from spasmodic open seasons seem much worse to the conscientious objector to the shooting of elk than do smaller regular yearly kills. Extensive killings at irregular intervals are likely to cause adverse comment and adverse reaction which, even though born of lack of understanding of the situation, curtail proper game management. Hunting will be much more satisfactory and stabilized when it is definitely known that about a specified number will be taken from each of the herds each year.

There are still a number of localities in the state which do not have elk. In many of these places their propagation is desirable. The local people wish to have elk introduced but in some cases hesitate to do so because they fear too large a herd may result. In such a case, the sportsmen, stockmen, and all others concerned should meet and decide upon a desirable limit to the herd, above which any increase would be harvested by hunting. The State Game Refuge Committee should follow their decision.

There is a large measure of satisfaction to the citizens of Utah in knowing that the rearing of elk has been successful. It shows broadmindedness and unselfishness on the part of the sportsmen and stockmen for each has had to make concessions in the interest of the other. It is true there are still unsatisfactory conditions and there are many things to be learned about elk management, but the attitude of the people and the earnestness and thoughtfulness with which the problems are being attacked and worked out, point to satisfactory solutions of the problems and to the continued success of elk propagation and management in Utah.

## HOT AIR MAIL

(Continued from Page 28)

Stop.

Willow Springs.

According to my book of perjury (diary), this must be July 15. We just moved to this camp and when we were unpacking I found this unfinished letter, so I am going to try and finish it, so that I can send it out the next chance I get. I am still on the bug job, but the crew has dwindled somewhat in size. The big camp broke up about the first of the month, and five of us were sent out to clean up the remaining small patches.

You have always complained about getting fat in the summer time; well if you want a sure cure method of retaining that school girl figure, just try a bug burning job. I am retaining my slender figure so well that my ribs stick out like the keys on a xylophone, but I can whip my weight in band saws. If you doubt it, just drop into camp some evening about six bells.

Since July 10th we have been working nights because it is too hot and dry to burn during the day. But even night burning dosen't deprive us of the fire fighting job. The other night Bart fired a tree just after midnight, and on our way back to camp the next morning, we saw some smoke, so rode over to it, and found that several large logs and a patch of small trees had gotten in the way of a ground fire. If my abode in the next world is as warm as that place was, I think I prefer to stay here. Well, the only difference between the way we spent that day and the way we spend any other day, was that we missed a couple of meals and used all of our energy in fighting fires instead of horse flies and mosquitoes.

Say, do you know that fandangled stuff called "Flit"? It is used by housewives to keep the flies outside where they belong. Whether you know it or not, we have found a new use for it. Two of the horses have been around camp fighting flies all morning. We had watched them stamping their feet, switching their tails and swinging their heads so long that we were beginning to feel sorry for the poor devils. It has been said that need is the mother of discovery and it must be, because we discovered that "Flit" acted as a good "so-boss" when applied to horses. I went into Bill's (the boss') tent and found this said fly tonic; then Bart and I went over to the horses. Old Jinks seemed to have a child-like faith in me because he stood still while I blew that atomized fly tonic all over him. But

Bart's horse, Cockroach, didn't have that much faith in the human race, so we had to tie her up. The dear old soul was blessed with a balky disposition, and as soon as she found she was tied to something solid, she began to stretch her neck and that tie rope. Bart was quick to take advantage of opportunities, so while Cockroach was trying to break that rope, in a long steady pull, he blew so much of that "Flit" on her that the old nag smelled like a drug store. When we untied the old sister and turned her loose, both horses walked out into the meadow, and now they are eating as peacefully as two old contented milk cows. If Bill's "Flit" lasts and he doesn't catch us, we will see that from now on, some of the horses get released from the fly fighting job long enough to get something to eat.

Two Days Later.

I haven't had a chance to send this letter to town yet, so suppose I can just as well keep adding to it. If you read it in the same way that it is being written, it will last you a long time.

Yesterday it was my turn to spot trees, so I didn't have to worry about amusing myself by catching horseflies and weighting them down with a spear of grass. Bill and I take turns in spotting trees.

By spotting, I mean finding infested trees, and tacking a white card on each one of them. The card is tacked on the tree so that we can find it at night when we are stumbling around with a gas lantern in one hand and a tank of oil hung over one shoulder.

"Doc" just announced that the poison was ready, so I am going in to surround a little chuck. If I hear any new gossip, I will pen it later.

Hurrah! I haven't been so happy since the other night when I was lost. The supervisor drifted into camp while we were eating and asked how we were getting along with the bugs. One of our smartest fellows piped up with the information that we needed some address books. The boss' eyes opened and he wanted to know why we needed such. Bill then took the floor and informed him that the baby larvae had grown through the pupal stage of development and were now adult beetles, and a lot of them were flying around looking for new quarters in which to reside.

"Well, if that is the case", said C. B., "you boys had better work the Ranger Dip and White Pine Ridge country, and call it good."

This letter is going out today, so you should get it in a day or two; plan a foursome party for the twenty-fourth, and I will join you.

Yours when the bugs have flown,

Slim.

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## THE WANDERINGS OF A LOOKOUT'S MIND.

(Continued from Page 26 )

longest known, the cubs divided their attention between our gentleman of the tree and the 5 gallon water bag, abandoned on the trail. It is sufficient to say that they, the youngsters, so worried the occupant of the tree that the tree itself verily quaked and trembled (reason unknown) while the water bag in the process lost both its corks, allowing its contents to merrily trickle away, and so at the end of a long day mother bear, followed by the "makings," serenely wandered off in search of food, leaving our lookout man feeling much the same as Rip Van Winkle must have felt.)

"Amen."